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ABSTRACT:

PURPOSE: To make a permanent set remain behind as well as to expand a service temperature zone showing the degree of superelasticity, by giving a superelastic material a strain to the extent of its work hardening zone by slip deformation, while forming it into plastic deformation.

CONSTITUTION: A superelastic alloy material of Ti-Ni, etc., is given such a

strain as being beyond a superelastic zone and thereby turned into plastic deformation, making a permanent set remain behind by more than 10%. When the superelastic alloy is given a large strain beyond the superelastic zone, it enters a work hardening zone by slip deformation, producing the work hardening there, whereby the permanent set is left behind after load removal due to the plastic deformation by slippage. With this, the superelastic alloy shows its excellent superelasticity at a wide range of temperature zones so that any influence attributable to the service temperature is insignificant and a spring characteristic approximate to linearity can be secured.

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